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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.    | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------|------------------|
| 10/554,028  | 06/30/2006  | Chunquan Chen        | 2793/112               | 7849             |
| 23122   | 7590        | 06/18/2009           | EXAMINER               |                  |
| RATNERPRESTIA<br>P.O. BOX 980<br>VALLEY FORGE, PA 19482 |             |                      | PRYOR, ALTON NATHANIEL |                  |
|   |             |                      | ART UNIT               | PAPER NUMBER     |
|   |             |                      | 1616                   |                  |
|   |             |                      | MAIL DATE              | DELIVERY MODE    |
|   |             |                      | 06/18/2009             | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/554,028

**Applicant(s)**

CHEN ET AL.

**Examiner**

ALTON N. PRYOR

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date 12/18/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's arguments filed 12/18/08 have been fully considered but they are not persuasive. See discussion below. Previous rejections, objections and other issues not addressed below are withdrawn.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7-13,16 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (WO 00/04778; 2/3/00). Smith et al. teach a method for promoting the germination of seed and/or seedling emergence and/or the growth plants (e.g. legumes) comprising subjecting the plants to an effective amount of an agricultural composition comprising Lipo chitooligosaccharide (LCO). See abstract, page 4 lines 21-28, page 16 lines 1-8 and Examples 4-6. The application of a plant to LCOs would include contacting the whole plant (foliage and stem) with the LCOs. Smith et al. do not state that plants are harvested or that harvesting resulted in a yield increase. However, it is inherent that plants such as legumes would be harvested. It is also inherent that instant method of harvesting results in an increased yield since both Smith et al. and instant claims disclose the same active step of applying LCO to plants.

*Response to Applicants' Argument*

The Applicants argue that Smith does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Examiner argues that Smith at page 4 line 20 – page 5 teaches that non-legume plants such as corn and rice are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Claims 7-13,16 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (WO 01/26465; 4/19/01). Smith et al. teach a method for increasing photosynthesis and/or yield plants (e.g. legumes) comprising exposing the plants to an effective amount of an agricultural composition comprising Lipo chito-oligosaccharide (LCO). See abstract, page 5 line 20 – page 7 line 24, page 18 line 3 – page 19 line 7, Examples 3,5,6 and table 3,6. The exposure of a plant to LCOs would include contacting the whole plant (foliage and stem) with the LCOs. Smith et al. do not state that plants are harvested or that harvesting resulted in a yield increase. However, it is inherent that plants such as legumes would be harvested. It is also inherent that instant method of harvesting results in an increased yield since both Smith et al. and instant claims disclose the same active step of applying LCO to plants.

*Response to Applicants' Argument*

The Applicants argue that Smith does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Examiner argues that Smith at page 4 line 20 – page 5 teaches that non-legume plants such as corn and rice

are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Note the WO patent number for this rejection has been corrected to read WO 01/26465 instead of previously cited WO 00/04778. Note, both WO 01/26465 and WO 00/04778 are cited on PTO form 892.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 7-13,16 are rejected under 35 U.S.C. 102(e) as being anticipated by Prithiviraj. (A host specific bacteria-to-plant signal molecule (Nod factor) enhances germination and early growth of diverse crops, Planta, 2003, vol. 216, pp. 437-445). Prithiviraj teaches a method enhancing germination and early growth of plants (e.g. legumes) comprising applying to the plants to an effective amount of an agricultural composition comprising Lipo chitooligosaccharide (LCO). See abstract and p. 440. The application of a plant to LCOs would include contacting the whole plant (foliage and stem) with the LCOs. Prithiviraj does not state that plants are harvested or that harvesting resulted in a yield increase. However, it is inherent that plants such as legumes would be harvested. It is also inherent that instant method of harvesting results in an increased yield since both Prithiviraj and instant claims disclose the same active step of applying LCO to plants.

*Response to Applicants' argument*

Applicants argue that Prithiviraj provides no experimental methodology or evidence of an effect of LCOs on flowering or fruiting in nonleguminous plants. The Examiner argues that Prithiviraj at page 440 teaches that non-legume plants such as corn and rice are treated with LCOs. Since both instant invention and Prithiviraj teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (WO 00/04778; 2/3/00), Smith et al. (WO 01/26465; 4/19/01) or Prithiviraj et al. The references teach all that is recited in claims 14 and 15 except for the administration of the claimed concentration ranges LCO. In the absence of unexpected results for the claim concentration range, it is well within the skill of an artisan in the field to determine the optimum concentration. One would have been motivated to do this in order to gain proper and healthy maturation of the plant.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Telephonic Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTON N. PRYOR whose telephone number is (571)272-0621. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alton N. Pryor/  
Primary Examiner, Art Unit 1616